

**DET 84 Course Outline as of Spring 2008****CATALOG INFORMATION**

Dept and Nbr: DET 84

Title: MOBILE HYDRAULICS

Full Title: Mobile Hydraulics

Last Reviewed: 1/22/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.25	17.5	Lecture Scheduled	39.38
Minimum	3.00	Lab Scheduled	2.25	8	Lab Scheduled	39.38
		Contact DHR	0		Contact DHR	0
		Contact Total	4.50		Contact Total	78.75
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 78.75

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As: AGMEC 84

Formerly: DET 63

**Catalog Description:**

Study of the theory, application and component parts of hydraulic systems. Emphasizes fundamentals in dismantling, inspection, troubleshooting and repair of hydraulic components commonly used in automotive, farm and construction service.

**Prerequisites/Corequisites:****Recommended Preparation:**

Completion of DET 80 and eligibility for ENGL 100 or ESL 100.

**Limits on Enrollment:****Schedule of Classes Information:**

Description: Study of the theory, application and component parts of hydraulic systems used in automotive, farm and construction service. Emphasizes fundamentals in dismantling, inspection, troubleshooting and repair of hydraulic components. (Grade Only)

Prerequisites/Corequisites:

Recommended: Completion of DET 80 and eligibility for ENGL 100 or ESL 100.

Limits on Enrollment:

Transfer Credit: CSU;  
Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>			Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>			Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>			Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective:	Fall 1981	Inactive:	Fall 2014
<b>UC Transfer:</b>		Effective:		Inactive:	

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon successful completion of this course students will be able to:

1. Explain the operating principles of fluid power systems.
2. Apply the nomenclature of hydraulics and use and interpret the proper symbols.
3. Identify and assess hydraulic system components.
4. Examine and evaluate faulty hydraulic components.
5. Change components in the system and reconnect and test for proper operation.
6. Interpret instruction and repair manuals in order to diagnose systems and perform basic repair and maintenance procedures.
7. Discuss and apply personal, shop, and environmental safety procedures.

### **Topics and Scope:**

1. Principles of hydraulics
  - a. basic laws of fluids
  - b. graphic symbols
  - c. system operation
2. System design
  - a. block type system
  - b. open and closed systems
  - c. hydraulic circuits
3. Hydraulic components
  - a. reservoirs, filtration, and conduit
  - b. pumps and motors
  - c. valves
  - d. actuators
4. Maintenance & repair
  - a. basic troubleshooting

- b. cleaning procedures
  - c. failure analysis
  - d. general maintenance
  - e. component repairs
5. Safety
- a. personal
  - b. shop
  - c. environmental

### Assignment:

1. Complete reading (approximately) 30 pages a week and exercises related to the theory and operation of mobile hydraulic systems.
2. Perform maintenance and repair procedures for hydraulic systems and components.
3. Disassemble, evaluate and reassemble pumps, motors and cylinders.
4. Solve problems related to mobile hydraulic systems.
5. Lab reports
6. Quizzes

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Lab reports

Problem solving  
10 - 25%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Structured lab exercises

Skill Demonstrations  
20 - 60%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, Completion, quizzes (4)

Exams  
30 - 70%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

Fundamentals of Service, Hydraulics: Deere & Co., 3rd Ed. 2006